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( Reaffirmed 2006 )

( Reaffirmed 2011 )

( Reaffirmed 2016 )

( Reaffirmed 2020 )

*Indian Standard*  
**SPECIFICATION FOR  
BURNT CLAY PAVING BRICKS**  
*( Second Revision )*

**भारतीय मानक**  
**फर्श बनाने के लिए पकी मिट्टी की ईंटों की विशिष्टि**  
**( दूसरा पुनरीक्षण )**

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**BUREAU OF INDIAN STANDARDS**  
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**NEW DELHI 110002**

*March 1989*

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**मानक भवन, 9 बहादुरशाह ज़फर मार्ग**  
**नई दिल्ली 110002**

# Indian Standard

## SPECIFICATION FOR BURNT CLAY PAVING BRICKS

### ( Second Revision )

#### 0. FOREWORD

**0.1** This Indian Standard ( Second Revision ) was adopted by the Bureau of Indian Standards on 24 February 1988, after the draft finalized by the Clay Products for Building Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Paving bricks have a large field of use as a paving material for roads, for heavy duty and industrial floors, and particularly suited for heavy wear and tear for steel tyred traffic. Further, with gradual adoption of mechanized processes for the production of clay products in the country for which a number of plants are being set up and are at different stages of construction, these bricks would be produced in large scale and would find greater use in the field of floors and pavement construction. In addition to the requirement for resistance to heavy wear and tear, stricter control for uniform quality for these bricks is also of vital importance in order that paving wears evenly. Realizing the importance of the material in the field of floors and pavement construction, this standard has been formulated to lay down the essential requirements regarding dimensions, compressive strength, percentage of water absorption, etc, for paving bricks and is intended to

serve as a guide for control of its quality in manufacture and use.

**0.3** This standard was first published in 1966 and subsequently revised in 1975. In this second revision, sizes of the paving bricks have been modified to bring it in line with the sizes of modular bricks as given in IS : 1077-1986\*. Furthermore tolerances on dimensions of bricks have been reduced. The method of determination of dimensions and tolerances has been specified on the basis of measurement of dimensions of a minimum of 20 bricks rather than for an individual brick. The dimensions of bricks have been specified in millimetres and the strength values in N/mm<sup>2</sup>. A new requirement on efflorescence has been included.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

\*Specification for common burnt clay building bricks ( fourth revision ).

†Rules for rounding off numerical values ( revised ).

#### 1. SCOPE

**1.1** This standard covers dimensions, quality and strength, and methods of sampling and test for burnt clay paving bricks for use in construction of pavements.

#### 2. GENERAL

**2.1** The bricks shall be manufactured from suitable soils. The bricks shall be mechanically shaped and not hand moulded. The burning process shall be so controlled that the bricks are thoroughly burnt, annealed, tough and durable so that, when broken, bricks show a uniformly dense structure free from lime, large voids and marked laminations.

**2.2** The bricks shall have smooth rectangular faces and sharp corners.

#### 3. DIMENSIONS AND TOLERANCES

**3.1 Dimensions** — The standard sizes for paving bricks shall be as given below. The bricks shall not be provided with frogs:

<i>Length</i>	<i>Width</i>	<i>Depth</i>
mm	mm	mm
190	90	90
190	90	40

**3.2 Tolerance** — The permissible tolerances on the dimensions specified in 3.1 shall be as follows:

<i>Dimensions</i>	<i>Total Tolerance for 20 Bricks</i>
mm	mm
190	± 80
90	± 40
40	± 40

**3.2.1** Twenty ( or more according to the size of stack ) whole bricks shall be selected at random from the sample selected under 5. All blisters, loose particles of clay and small projections shall be removed. They shall then be arranged upon a level surface successively as indicated in Fig. 1A, 1B and 1C in contact with each other and in a straight line. The overall length of the assembled bricks shall be measured with a steel tape or other suitable inextensible measure sufficiently long to measure the whole row at one stretch. Measurement by repeated application of short rule or measure shall not be permitted. If, for any reason, it is found impracticable to measure bricks in one row, the sample may be divided into rows of 10 bricks each which shall be measured separately to the nearest millimetre. All these dimensions shall be added together.

#### 4. PHYSICAL PROPERTIES

**4.1** The average compressive strength when tested according to the procedure laid down in IS : 3495 ( Part 1 )-1976\* shall not be less than 40 N/mm<sup>2</sup> ( 400 kgf/cm<sup>2</sup> approximately ).

**4.2** The average water absorption by weight after 24 hours immersion in cold water when determined according to the procedure laid down in IS : 3495 ( Part 2 )-1976† shall be not more than 5 percent.

\*Methods of tests for clay building bricks: Part 1 Determination of compressive strength ( *second revision* ).

†Methods of tests for clay building bricks: Part 2 Determination of water absorption ( *second revision* ).

**4.3 Efflorescence** — When tested according to the procedure laid down in IS : 3495 ( Part 3 )-1976\*, the rating of efflorescence shall be nil.

#### 5. SAMPLING AND CRITERIA FOR CONFORMITY

**5.1** The sampling and criteria for the conformity shall be as specified in IS : 5454-1978‡.

#### 6. MARKING

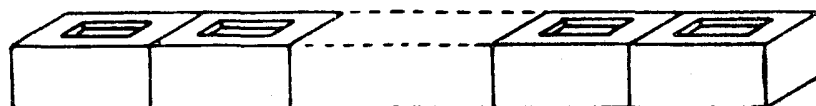
**6.1** Each brick shall be marked in a suitable manner with the manufacturer's identification mark or initials.

**6.1.1** Each brick may also be marked with the Standard Mark.

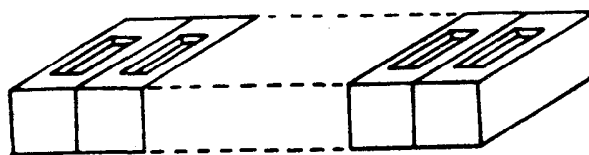
**NOTE** — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

\*Methods of tests for clay building bricks: Part 3 Determination of efflorescence ( *second revision* ).

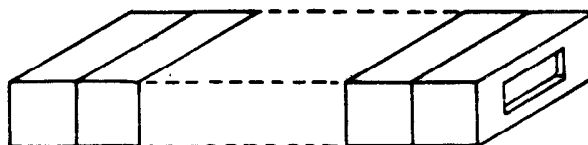
‡Methods of sampling of clay building bricks ( *first revision* ).



1A Measurement of Length



1B Measurement of Width



1C Measurement of Height

FIG. 1 MEASUREMENT OF TOLERANCE OF PAVING BRICKS

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†Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400097

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